

A NEW MEMBER OF THE FAMILY THAUMASTOCORIDÆ.

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Kirkaldy, 1907,¹ established the new subfamily Thaumastocorinæ of the family Lygæidæ "on a single carded specimen" of *Thaumastocoris australicus*, new genus and species, from Queensland, Australia. His subfamily characterization based upon the "structure of the head, labium, legs, etc.," was very meager. Dr. Bergroth, 1909,² in describing from Tasmania a new genus and species, *Baclozygum depressum*, assembles the chief characters from Kirkaldy's generic description of *Thaumastocoris* combining these with the characters of his *Baclozygum* to formulate a more definite demarcation of the subfamily Thaumastocorinæ. It is important to note in the words of this author that his diagnosis of the subfamily "so far as the abdomen is concerned is founded on the genus *Baclozygum* since Kirkaldy was unable to examine the single gummed example of *Thaumastocoris* and he tells me the specimen was lost in the drawing."

Dr. Bergroth's characterization of this subfamily in Latin may be translated as follows:

"Jugæ much longer than the non-sulcate tylus. Rostrum not reaching posterior margin of the prosternum. Clavus towards apex distinctly amplified, commissure at least equally as long as the scutellum. Membrane without veins. Anterior legs inserted in the middle of the disk of the prosternum, acetabulæ closed up. Apex of the tibia between the two segmented tarsi furnished with a membranous lobuliform caducous appendage somewhat distant from the tarsi. Venter of male furnished with eight visible segments (besides the genital), the last two segments and the genital one asymmetrical, apex of this on the left side (right seen from below) sinuate, the latter [genital] obliquely suboval, genital aperture situated on the right side. Venter of the female furnished with seven visible segments, seventh segment large covering genital segment below. (Otherwise as in subfamily Geocorinæ. Spiracles not investigated.)"

¹ Proc. Linn. Soc. New South Wales, XXXII, 777. Plate XLIII, figs. 1, 2, 3, 1907.

² Deutsche Entomol. Zeitschr., 331, 1909.

Of these diagnostic characteristics Bergroth in a later note places particular emphasis on the following: structure of the tarsi, venter of the abdomen and the membranous tibial appendages.

Dr. Reuter, 1912,³ raises this subfamily to distinct family rank, making it even the basis of a new phalanx and agreeing with Dr. Bergroth that it represents a very old and primitive group, geologically. In his arrangement of the families Reuter, following Bergroth, gives the distinctive characters which translated read as follows:

“Claws destitute of arolia. Apex of tibia between the two-segmented tarsi furnished with a membranous lobuliform caducous appendage, somewhat distant from the tarsi. Membrane without nervures. Venter of the male furnished with eight visible segments (besides the genital), the last two ventrally and the genital asymmetrical; female furnished with seven visible segments, seventh large covering the genital segment below.”

It is quite natural that Reuter who has made such extensive use of the arolia in his system of classification of the Miridæ should see special significance in their absence in this group and make this a character of the first importance coupled with the peculiar tibial appendage. The peculiar formation of the abdomen is placed secondary.

Up to the present time, so far as I have been able to find, our knowledge of this family has been limited to these two genera each represented by a single species from the Australian region.

Some months ago I received for investigation from Mr. Harold Morrison of the U. S. Bureau of Entomology a number of specimens from Cuba representing a distinct genus which owing to its close resemblance in most particulars to Kirkaldy's *Thaumastocoris* must belong to this family. In order however to admit the inclusion of this interesting little species in this family it will be necessary to create for it a new subfamily and revise the characterization of the family, as this Cuban species has arolia present on the tarsal claws and the tibiæ lack apical membranous appendages.

³ Öfv. Finska Vet. Soc. Förh., LIV, 10, 29-31, 58. 1912.

Xylastodorinæ, new subfamily.

Tylus extended to apex of the head, as long as the jugæ, these parallel sided. Rostrum apparently three-segmented (base hidden). Bucculæ represented by low, widely separated ridges as in *Thaumastocoris*. Lateral margins of the pronotum and corium expanded. Corium much wider than abdomen. Clavus parallel sided, not amplified apically. Commissure much shorter than scutellum. Membrane without veins. Meso- and metasternum fused (composite) and covered by a subcordate plate which is linearly grooved in the middle. Globular coxæ widely separated. Acetabulæ closed up. Odoriferous orifices absent. Seven pairs of ventral spiracles in the male. Tibia without apical membranous appendage. Two-segmented tarsi with arolia set closely to the widely divaricate, decurved claws. Apex of tarsi between the claws with two nearly parallel, porrect setæ. Venter of the two sexes apparently much as in *Thaumastocorinæ*, first segment however not linear, and the genital apparatus of the male more elongate (Figs. 2 and 3).

Xylastodoris, new genus.

Much flattened. Head porrect, nearly as wide as long; tylus and jugæ equally long, parallel sided. Four segmented antennæ short, less than twice as long as the pronotum, set upon antenniferous tubercles placed between the eyes and lateral margin of head, these entirely visible from above and subtruncated at apex. Margins of head before these, parallel sided to the rounded apex. Eyes well removed from anterior angles of pronotum, posterior to which the head is suddenly contracted. Ocelli widely separated. Bucculæ represented by two widely separated slightly raised ridges evanescent posteriorly. Rostrum short, flattened, apparently of three segments (base hidden), its apex not reaching middle of prosternum; piercing lancets arising before the origin of the rostrum. Pronotum wider than long, about as long as the head, lateral margins considerably expanded and slightly raised; disk flattened, shallowly transversely depressed just before middle; posterior lobe rather coarsely and closely punctate. Scutellum a little shorter than pronotum, a little longer than wide, finely punctate, non-carinate. Hemielytra much wider and longer than abdomen, consisting of clavus, corium and membrane. Lateral margin of corium rather widely expanded and slightly reflexed; disk slightly convex, shallowly punctate; outer apical angle narrowly, crescentically extended to apex of membrane. Clavus parallel sided, irregularly punctate. Membrane well

extended beyond abdomen, without veins. True wings composed of a few simple veins, without a hamus (Fig. 5). Mesosoma and metasternum fused, disk covered by a smooth subcordate shaped plate, the edge of which is narrowly elevated, linearly impressed down the middle. Odoriferous orifices absent. Legs short; globular coxæ widely separated. Femora slightly thickened and flattened, unarmed. Tarsi two-segmented, furnished with two widely separated decurved claws and arolia placed close to the claws (see Fig. 4). Abdomen of the male consisting of eight segments besides the genital, the last two and the genital asymmetrical; the eighth segment is slightly transverse and closely fused to the genital apparatus which consists of a flattened elongated sheath, tapering gradually to a more narrow obliquely truncate apex which is turned forward along either the right or left side of the body. The female has seven ventral segments, the genital segment covered below by the plate like seventh; fourth segment posteriorly and the 5th and 6th compressed; abdomen somewhat asymmetrical posteriorly. Male with seven pairs of spiracles placed ventrally.

X. luteolus n. sp.—Pale luteous. Apex of scutellum, apical half of terminal segment of antennæ and apex of rostrum infuscated. Eyes reddish brown. Form rather narrow oval, much flattened. Head only a little wider than long; porrect; obscurely punctate and faintly wrinkled; suddenly contracted back of eyes which are not in contact with anterior angles of pronotum. Ocelli concolorous, space between these a little over twice the distance to the eyes. Antennæ with short basal segment not attaining apex of head, second segment about twice the length of first, third segment a little more slender, subequal to second, fourth narrow spindle-form, nearly as long as third, apical half infuscated and finely pubescent. Rostrum short, apparently of three flattened segments (base hidden), infuscated apex reaching only a little beyond anterior margin of prosternum, the latter grooved to receive it. Bucculæ represented by two widely separated ridges. Pronotum slightly transverse, obscurely divided into two lobes, posterior lobe rather closely punctate; anterior and posterior margins concavely arcuated, the former nearly straight in the middle; transparent lateral margins strongly expanded and slightly reflexed, edge slightly concave near the middle. Scutellum almost equilateral, faintly punctate. Semi-transparent hemelytra with lateral margins widely expanded and slightly reflexed, longer than the abdomen. Clavus parallel sided, irregularly punctate. Commissure about one third the length

of the scutellum. Corium sparsely, shallowly punctate, with faint indications of veins. Membrane decolorous, transparent. Ventral parts pale luteous. Prosternum transverse, posterior margin more strongly concave than the anterior margin; median longitudinal groove not quite reaching the posterior margin. Propleuræ punctate.

Length 2-2½ mm.

For other characters see generic description and figures.

Type and paratypes in the U. S. N. M. (no. 23641); paratypes in the Coll. of the Tropical Insect Survey in charge of Mr. Harold Morrison and in my collection.

Described from numerous examples from Santiago de las Vegas, Cuba, May, 1918, sent to Mr. Harold Morrison of the U. S. Bureau of Entomology by Dr. Mario Calvino, Director Estación Experimental Agronómica de Cuba. Dr. Calvino states that these were collected from the Royal Palm (*Oreodoxa regia*) on the young growth of which they are doing serious damage.

The revised family and the subfamily characters may be summarized as follows:

Family—THAUMASTOCORIDÆ.

Tarsi two-segmented, first segment minute. Apex of tibia with or without a lobular membranous caducous appendage; if the latter then are the tarsal claws furnished with arolia. Coxæ globular, widely separated; acetabulæ closed up. Rostrum short apparently three-segmented. Venter of the male posteriorly asymmetrical consisting of eight segments besides the genital; genital segment obliquely antrorse along either the right or left side of venter. Venter of female with the seventh segment covering the genital. Spiracles situated ventrally (?). Odoriferous orifices invisible. Membrane without veins.

Subfamily I. *THAUMASTOCORINÆ*.

Apex of tibia provided with a lobular membranous caducous appendage. Tarsal claws devoid of arolia. Jugæ much longer than tylus. Clavus amplified apically. Commissure about as long as the scutellum (*Thaumastocoris australicus* Kirkaldy and *Baclozygum depressum* Bergroth).

Subfamily II. *XYLASTODORINÆ*.

Apex of tibia without membranous apical appendage. Tarsal claws provided with arolia. Jugæ and tylus equally long. Clavus parallel sided. Commissure much shorter than scutellum. Hemielytra much wider than abdomen. Venter of the male and female as previously described. (Type—*Xylastodoris luteolus* n. sp.)

Reuter in his "Bemerkungen über mein neues Heteropteren-system"⁴ places the Thaumastocoridæ in the series Onychiophora along with the families Pyrrhocoridæ, Lygæidæ, Colobathristidæ and Neididæ. The characters previously fixed by Reuter⁵ for this series were later⁶ modified by him to include the Thaumastocoridæ. The discovery now of this new member modifies Reuter's system not only so far as the characterization of the family is concerned but if it is to be retained in its original place in his system, at least two further important modifications must be made in the original definition of the Series Onychiophora. In my new genus *Xylastodoris* the meso- and metasternum are composite and the rostrum, although difficult to see because of the nature of its concealment at base, has apparently but three segments.

There is no doubt that this new member serves to further demonstrate the primitiveness of the family. And yet if *Xylastodoris* is compared with the typically primitive characters of a heteropteron as outlined by Reuter⁷ there is a noticeable occurrence of less primitive features. Thus following the system of this eminent authority among the structural characters which denote its primitiveness may be mentioned the following: presence of ocelli, four-segmented antennæ, hemielytra composed of corium, clavus and membrane, composite meso- and metasternum, homomorphous pairs of legs, abdomen composed of seven or eight segments which are posteriorly asymmetrical (at least in the male), abdominal spiracles [all or] segments 2-7 ventral. Its structural characters which indicate a modification tending

⁴ Öfversigt Finska Vet. Soc. Förh., LIV, 49, 1912.

⁵ Acta Soc. Sci. Fenn., XXXVII, 75, 1910.

⁶ Op. cit., 31, 1912.

⁷ Op. cit., 37, 1910.

towards greater specialization are in the main as follows: reduction in the number of segments of the rostrum to three, membrane without nerves, metasternum without odoriferous orifices, hind coxæ of the trochalopodous type, two segmented tarsi, claws with arolia. From the foregoing it is extremely difficult to trace the phylogeny of this group but it probably is a relic of a Proto-Lygæid stem. On the whole but particularly because of the presence of arolia and the structure of the head *Xylastodoris* seems to me less primitive than the other two genera.

The external genital armature of the male is to me the most remarkable peculiarity of this genus as nothing at all resembling it occurs in the Hemiptera, outside of this family. The identity of the respective sexes has in fact given me considerable trouble, and the subject is by no means entirely clear to me yet. In fixing the sexes I have been obliged to depend upon the remarks of Dr. Bergroth as my guide and yet this reliable authority unfortunately fails to indicate his reasons for the demarcation of the sexes. Judging from the external appearance of the venter I should have reversed the sexes for what is indicated as the male (Sec. Bergroth) appears to me to be the female with an asymmetrical ovipositor and the ventral aspect of the female (Sec. Bergroth) resembles the terminal ending in the male of several families where the genitalia are covered below. Furthermore it is rather peculiar that the male abdomen is wider than the female one.

Note: It may be worth while to remark that the investigation and original drawings by the author have been made with a No. 4 ocular and an A-2 objective of a Zeiss binocular.

- FIG. 1. Dorsal view of ♂ *Xylastodoris luteolus* n. sp.
- FIG. 2. Ventral view ♂ *Xylastodoris luteolus* n. sp.
- FIG. 3. Venter of ♀ *Xylastodoris luteolus* n. sp.
- FIG. 4. Tarsus of *Xylastodoris luteolus* n. sp.
- FIG. 5. Wing of *Xylastodoris luteolus* n. sp.